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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

YIGDALL, MICHAEL J

ART UNIT	PAPER NUMBER
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2192

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,737	Applicant(s) ZURAWKA ET AL.	
	Examiner Michael J. Yigdal	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005 and 19 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/20/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This application is a national stage entry of PCT International Application No. PCT/DE04/01333, filed on June 24, 2004. Claims 12-22 are pending.

Priority

2. Acknowledgment is made of Applicant's claim for foreign priority based on an application filed in Germany on June 24, 2003. It is noted, however, that Applicant has not filed a certified copy of the 103 28 240.8 application as required by 35 U.S.C. § 119(b).

Information Disclosure Statement

3. The information disclosure statement filed on December 20, 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document, each non-patent literature publication or that portion which caused it to be listed, and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Objections

4. Claim 21 is objected to because the claim does not end with a period. Appropriate correction is required. See MPEP § 608.01(m).

Claim Rejections under 35 U.S.C. § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claim 17 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention.

With respect to claim 17 (new), there is insufficient antecedent basis for “the operating state” such as recited in the claim. The examiner’s interpretation is that claim 17 should be dependent on claim 16 rather than on claim 12.

Claim Rejections under 35 U.S.C. § 101

7. 35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 12-22 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

With respect to claim 12 (new), the claim is directed to an electronic control unit. As recited, however, the electronic control unit comprises only a software module including software. Software and computer programs *per se* do not fall within any category of patent-eligible subject matter. See “Interim Examination Instructions for Evaluating Subject Matter Eligibility under 35 U.S.C. § 101” (August 2009).

With respect to claims 13-18 (new), the claims do not remedy claim 12 and therefore are directed to non-statutory subject matter for the same reason(s) as noted above. The examiner notes that claim 18 recites only an intended use of the electronic control unit.

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With respect to claim 19 (new), the claim is directed to a method. As recited, however, the method is not tied to any particular machine or apparatus and does not transform any particular article into a different state or thing. Thus, as a whole, the claimed method is directed to an abstract idea and does not qualify as a patent-eligible “process” under 35 U.S.C. § 101. See “Interim Guidance for Determining Subject Matter Eligibility for Process Claims in View of *Bilski v. Kappos*,” 75 Fed. Reg. 43922 (July 2010).

With respect to claim 20 (new), the claim does not remedy claim 19 and therefore is directed to non-statutory subject matter for the same reason(s) as noted above.

With respect to claim 21 (new), the claim is directed to a computer program. As recited, however, the computer program is not stored or recorded on any particular computer-readable medium. Software and computer programs *per se* do not fall within any category of patent-eligible subject matter. See “Interim Examination Instructions for Evaluating Subject Matter Eligibility under 35 U.S.C. § 101” (August 2009).

With respect to claim 22 (new), the claim does not remedy claim 21 and therefore is directed to non-statutory subject matter for the same reason(s) as noted above.

Claim Rejections under 35 U.S.C. § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for

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patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 12-18 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,865,459 to Harms et al. (“Harms”).

With respect to claim 12 (new), Harms teaches an electronic control unit (see, for example, FIG. 1 and the abstract), comprising:

a software module including software that includes components (see, for example, FIG. 2, which shows a software architecture that includes components), wherein:

the software includes a plurality of software interfaces that are optimized with respect to an exchange of data and provided for an optional coupling in of a plurality of applications (see, for example, column 4, lines 28-54, which shows that the software includes interfaces that are optimized for performance and provide for reuse in a plurality of applications), and

the software includes at least one application-specific software code of a component for each application capable of being coupled in, the at least one application-specific code being activated when the application is coupled in (see, for example, column 5, lines 23-40, which shows that the software includes application-specific functionality).

With respect to claim 13 (new), the rejection of claim 12 is incorporated, and Harms further teaches that:

the software has a hierarchical layer architecture with respect to a mutual access possibility of the software components, each software component being assigned to a layer (see,

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for example, column 4, line 65 to column 5, line 13, which shows that the software architecture is hierarchical).

With respect to claim 14 (new), the rejection of claim 13 is incorporated, and Harms further teaches that:

the hierarchical layer architecture implements a separation of hardware-independent software components from hardware-dependent software components (see, for example, column 5, line 54 to column 6, line 9, which shows that the software architecture implements such a separation).

With respect to claim 15 (new), the rejection of claim 12 is incorporated, and Harms further teaches that:

the software interfaces are grouped into “on board” and “off board” interfaces as a function of the respective applications that may be coupled to them (see, for example, column 3, lines 35-55, which shows “on board” interfaces, and column 5, lines 14-22, which shows “off board” interfaces).

With respect to claim 16 (new), the rejection of claim 12 is incorporated, and Harms further teaches that:

the software assumes in each case one of several possible operating states, as a function of data present at the software interfaces and therein supports exclusively condition-specific functionalities (see, for example, column 3, lines 35-55, which shows that the software assumes operating states based on input signals and supports condition-specific functionality).

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With respect to claim 17 (new), the rejection of claim 16 is incorporated, and Harms further teaches that:

the software may assume, as the operating state, one of a “software update” state, a “software parameterization” state, a “software diagnosis” state, a “coasting” state, a “monitoring” state, and an “on” state (see, for example, column 5, lines 46-53, which shows the software assuming a “monitoring” state).

With respect to claim 18 (new), the rejection of claim 12 is incorporated, and Harms further teaches that the electronic control unit is used in an automobile electronic system for controlling operating sequences in a vehicle (see, for example, column 3, lines 23-34).

Claim Rejections under 35 U.S.C. § 103

11. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 19-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Harms in view of U.S. Patent No. 6,751,788 to Göser (“Göser”).

With respect to claim 19 (new), Harms teaches a method for specifying a software architecture for an electronic control unit (see, for example, FIG. 1 and the abstract), comprising:
after a specification of defined software interfaces, of software components, of software layers, and of software operating states, automatically assigning in each case the software

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components to the software layers and to the software operating states (see, for example, FIG. 2 and column 4, lines 28-54, which shows a software architecture that defines interfaces, components and layers, and column 3, lines 35-55, which further shows that the software defines operating states based on input signals, and see, for example, column 4, line 65 to column 5, line 13, which shows that the components are assigned to the layers and states).

Harms does not explicitly describe:

verifying assignments made by the automatically assigning step by performing a subsequent analysis and checking interactions implemented based on the assignments.

However, in an analogous art, Göser teaches a method for formally checking and testing embedded software components (see, for example, column 2, lines 31-41). Göser describes the division of the software components in an electronic control unit (see, for example, FIG. 1 and column 4, line 64 to column 5, line 12), and further describes that the checking and testing comprises analyzing the interactions of the software components (see, for example, FIG. 2 and column 5, lines 13-50).

Therefore, as Göser suggests, it would have been obvious to those of ordinary skill in the art at the time the invention was made to implement the teachings of Harms such that the method comprises:

verifying assignments made by the automatically assigning step by performing a subsequent analysis and checking interactions implemented based on the assignments.

With respect to claim 20 (new), the rejection of claim 19 is incorporated, and Harms in view of Göser further teaches or suggests that:

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in the case of insufficient assignments, subdividing at least one of the software components into specified subcomponents, the software layers into specified sublayers, and the software operating states into specified substates; and
automatically carrying out a renewed assignment.

Specifically, Göser describes that the testing and checking comprises verifying whether the software components are compatible with one another and whether they are provided with sufficient resources (see, for example, column 5, lines 51-62). A person of ordinary skill in the art would have been prompted to change the division of the software components if necessary to make them operable in the electronic control unit.

Therefore, it would have been obvious to those of ordinary skill in the art at the time the invention was made to implement the teachings of Harms and Göser such that the method further comprises:

in the case of insufficient assignments, subdividing at least one of the software components into specified subcomponents, the software layers into specified sublayers, and the software operating states into specified substates; and
automatically carrying out a renewed assignment.

With respect to claim 21 (new), the claim is directed to a computer program that is analogous to the method recited in claim 19 (see the rejection of claim 19 above).

With respect to claim 22 (new), the rejection of claim 21 is incorporated, and Harms in view of Göser further teaches or suggests that:

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the computer program is embodied in a computer program product (see, for example, Harms, column 4, lines 55-60).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure (see the attached Notice of References Cited).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Yigdall whose telephone number is (571) 272-3707. The examiner can normally be reached on Monday to Friday from 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J. Yigdall/
Primary Examiner, Art Unit 2192